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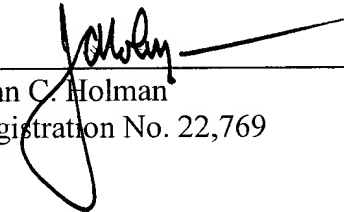
In this Supplemental Response, Applicant has provided the English translation for the documents AM and AR cited in the Information Disclosure Statement (IDS) filed on January 30, 2002, as required by the Examiner. Accordingly, it is respectfully submitted that Applicant has properly complied with the requirement for submission of IDS.

Having overcome all outstanding grounds of rejection, the application is now in condition for allowance, and prompt action toward that end is respectfully solicited.

Respectfully submitted,

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Enclosure:

English translation for the documents AM and AR cited in the Information Disclosure Statement filed on January 30, 2002.

Apparatus and process for freezing foods

The invention relates to an apparatus and process for the freezing, or surface-freezing, of foods, such as sausage and cheese bars. For the use of such a process and apparatus, in particular the employment of a chilling liquid is proposed which consists of chilled alcohol, in particular spirits or ethanol, alkanes, acetic esters, acetone or a mixture thereof and if appropriate is admixed with corresponding denaturants and distilled water.

Dr. Otto-Albrecht Neumüller

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Sodium carboxymethylcellulose see "cellulose glycolate and Whistler and BeMiller, Industrial Gums, Polysaccharides and Their Derivatives, New York: Academic Press 1973.

Natrium causticum see "sodium hydroxide.

Natrium cetylstearylosulfuricum see "sodium cetostearyl sulfate.

Sodium chlorate, NaClO_3 , MW 106.45. Colorless, anhydrous hygroscopic, usually regular crystals, but also crystallizes in a metastable manner in rhombohedral and monoclinic forms, density 2.49, mp 248-261°. Soluble in water and alcohol; gives explosive mixtures with carbon, sulfur and the like (oxidizing agent), is toxic like all chlorates. Preparation: by electrolysis of aqueous solution of NaCl , use being made of anodes of magnetite or if appropriate lead-dioxide-coated graphite or activated titanium and cathodes principally of steel. During the electrolysis, overall, the following process occurs: $\text{NaCl} + 3 \text{H}_2\text{O} \rightarrow \text{NaClO}_3 + 3 \text{H}_2$, in which case an NaCl concentration at the anode as high as possible, a pH of 6-7 and relatively high temperatures need to be maintained, see Winnacker-Kühler (3.) 1: 288-295. Use: as oxidizing agent, for preparing perchlorates, for recovery of Br from salt waters, in explosives and igniting agents ("chlorate explosives) and as active ingredient in herbicides. An NaClO_3 solution must be handled with care; clothes which have been moistened with NaClO_3 solution must be washed thoroughly, since otherwise (for example when being dried in the vicinity of an oven) they catch fire, see also data sheet (F 10) for operations with potassium and sodium chlorate, Weinheim: Verl. Chemie 1964. For toxicity, see Klimmore, p. 138. In soil, NaClO_3 can still be detected 5 months after application of the 2% strength solution. The action may be based on oxidative destruction of plant tissue by released oxygen, inhibition of catalase activity or on toxic activity of NaOCl , to which NaClO_3

is reduced in the plant. In the textile industry NaClO_3 acts as a strong oxidizing agent in the development of vat dye esters in textile printing, Vigoureux printing for oxidative etching (chlorine etching) and for printing of aniline black and diphenyl black. In addition, NaClO_3 is an intermediate for the preparation of chlorine dioxide (see "chlorine oxides") and "sodium chlorite. About 70% of the production of sodium chlorate is used in the paper industry for bleaching purposes. NaClO_3 monocrystals are used in electrooptics and piezoelectrics. The production of NaClO_3 in the USA for 1972 is estimated at about 220 000 t.

References: Gmelin Syst. No. 21, Na, 1928, pp. 392-404, supplement pp. 168-180, 1745-1766; Kirk-Othmer 5: 52-61; Ullmann 5: 526, 587.

Obtainable from: Albright and Wilson; Baker; BDH; Biesterfeld; Fluka; Fosfatbolaget; Kali-Chemie; Klöckner-Chemie; Koch-Light; Merck; Minhorst (monocrystals); Biedel; Roth; Solvay (for documentation on manufacturers of sodium chlorate): see Achema-Jb. 1973: 2458.

Natrium chloratum. Latin name for "sodium chloride.

Natrium chloricum. Latin name for "sodium chlorate.

Sodium chloride, NaCl , MW 58.45. Chemically pure NaCl crystallizes from aqueous solution in colorless cubes which frequently grow in a cascade manner to form internally hollow pyramids; octahedrons or dodecahedrons are also occasionally found, density 2.164, mp 801° , bp 1440° , hardness 2.5; the vapor pressure corresponds to the formula NaCl . NaCl is not hygroscopic. In the crystal lattice Na and Cl ions alternate regularly with one another, see figs. 1e, 3 and 4 under "crystal lattice. During crystallization, gaps in the crystal can include small amounts of water; these evaporate on heating and crack the crystals ("decrepitate"), a crackling becoming audible. Inclusions of gases (carbon dioxide, hydrogen sulfide, methane etc.) are also possible ("decrepitating salt). Per 100 g of water, at 0° , 35.6 g of pure NaCl dissolve, at 20° ,

35.8 g and at 100° 39.2 g; the saturated aqueous solution boils at 107.7°. Colloidal, yellow to yellow-red NaCl solutions are formed when organic Na compounds are reacted with organic Cl compounds in anhydrous benzene. NaCl greatly decreases the freezing point of water (cryohydrate point -21.3°), which is the basis of its use in freezing mixtures and as deicing salt. It thaws effectively to about -10°, see also Ahlbrecht, Umschau 72 (1972) 160.

Physiological effects: Although many plants absorb small amounts of NaCl from the soil by the roots, it has proved possible to grow beans, peas and other plants in cultivation experiments completely free of salt. Evidently, NaCl is not essential for the usual agricultural plants, but it is required by what are termed halophytes (sea-shore plants). In contrast, animals and humans cannot survive without a certain minimum supply of NaCl, and this portion is supplied in part via food (meat contains NaCl), in part in the form of cooking salt. The level of the actual sodium chloride requirement is not known. For humans, however, a daily intake of approximately 6 g of NaCl in the case of moderate physical work, and of 19 g in the case of heavy physical work, for example in the tropics, should suffice, the average daily diet in Western Europe and the USA contains 10-20 g of NaCl. For Na metabolism see* Sodium and cf. * potassium. In the case of severe fluid losses, if appropriate these may be compensated for by injection or infusion of Ringer solution or physiological (isotonic) salt solution (contains 0.85% of NaCl). In the event of severe sweating (for example in the case of harvesters, stokers, foundry workers, smelting furnace workers etc.), it is recommended to dissolve some salt in soda water or beer and drink it to replace the NaCl lost by sweating. Low-salt ("low-sodium") diets or the use of salt substitutes is recommended in hypertension, heart and kidney disorders, insulin-treated diabetics. For the use of NaCl against malaria, see DDZ 22 (1967) 966.

Occurrence: NaCl is the most frequent Na compound in our field of life. It occurs in seawater (1 t of seawater contains on average 18.98 kg of chlorine and 10.56 kg of Na in ionic form) at approximately 3%, while inland seas (Mediterranean, Red Sea) can have significantly higher NaCl contents, and furthermore it has been deposited as rock salt, mixed with a few percent of admixtures (see cooking salt) from parts of seas which were drying out or cut off during various geological epochs (for example during the Zechstein age in northern Germany, during the limestone age in southern and central Germany). The rock salt deposits of the Zechstein age in parts reach over 1000 m depth in central Germany (Stassfurt region), for further details see potassium salts. The NaCl content of numerous mineral water sources is also worthy of mention. *Production:* NaCl is principally produced by four processes. 1. Mining of rock salt (Schmidt, Chemiker-Ztg, 97 (1973) 336-341) produces approximately 90% of the total NaCl in Germany; it is traded, in part denatured by petroleum or naphthalene and labeled by dyes (eosin) in trade as commercial salt, animal salt, edible salt, fertilizer salt and industrial salt for industrial purposes. 2. By evaporation of natural or artificially saturated aqueous NaCl solutions (brines, which have been formed, for example, by pumping water into subterranean deposits) boiled salts are obtained (edible salt, table salt), with fine, medium and coarse salt being differentiated according to how the evaporation is carried out industrially. 3. By drying seawater or water from salt lakes in hot countries (Spain, southern France, Crimea) collected in pools, in cold regions by partially freezing seawater (salt accumulation in unfrozen water fraction) etc. 4. To an increasing extent as "by"-product of seawater desalination for producing drinking water and utility water. For new developments in crystallization and evaporation technology see Messing (CZ Chemie-Techn. 2 (1973) 237 to 240) and Schmoll (Chem. Rdsch. 27 (1974)

No. 12, pp. 7-11). *Use:* As edible salt, animal salt, pickling salt for meat and fish, for freezing mixtures, as deicing agent for roads (where a consumption of 12 t/km of NaCl can also be incorporated into drinking water), for glazing earthenware, for salting out soaps, in tanning and metallurgy, in dyeing (as an additive to coupling baths, to increase the uptake capacity during dyeing with direct-uptake dyes, sulfur dyes and the like), in the chemical industry as starter material for virtually all other Na compounds (for example soda, sodium hydroxide solution, sodium carbonate, sodium sulfate, sodium nitrate, but also chlorine, chlorinated lime, hydrochloric acid, vinyl chloride, aluminum and many more), as pit salt for controlling coal dust in mining; for water treatment, as skin salt for skin preservation, in mineral waters in the case of digestive disorders, as a primitive emetic (warm concentrated aqueous solution), as an antidote in silver nitrate poisoning (produces nontoxic insoluble silver chloride), added to gargles in the case of catarrh of the airways (5-10% solution), in photography (addition to fixing baths, wash baths, for reduction in bleaching baths), for weed control etc. NaCl crystals serve as optical windows, lenses and prisms in IR spectroscopy and for X-ray diffraction. The worldwide production of sodium chloride was, in 1968, approximately 122 million metric tons, and in the Federal Republic of Germany 7.54 million tons. From 1970 to 1972 the production in Federal Germany for rock salt and smelting salt decreased from 9.19 to 6.98 million tons, for saline (boiling) salt from 0.746 to 0.715 million tons; the latter faced an edible salt consumption of 0.343 million tons.

References: Betsch, Salz des Lebens, Kochsalz-NaCl [Salt of life, cooking salt-NaCl], Stuttgart: Franckh 1971; DAB 7: 164-165, 697-698; Gimm and Jendersie, Kali- u. Steinsalzbergbau [Potassium salt and rock salt mining] (2 volumes), Leipzig: Grundstoffind. [Raw materials industry] 1968, 1969; Gmelin Syst. No. 21,

Na, 1928, pp. 305-531, supplement pp. 126 to 150, supplement 6, pp. 1-402; Junghans, Technologie des Kali- u. Steinsalzbergbaus, Leipzig: Raw materials industry 1964; Kaufmann, Sodium Chloride: The Production and Properties of Salt and Brine, New York: Reinhold 1960; Kirk-Othmer 18: 437, 468 to 484; Lötze, Rock Salt and Potassium Salts (2 volumes), Berlin: Bornträger 1957 and in preparation; Ramdohr-Strunz, pp. 457-468; Richter-Bernburg, Géologie des dépôts salins [Geology of Saline Deposits], Paris: UNESCO 1972; Salt, London: Roskill Inform. Service 1971; Schormüller, Alkaloidhaltige Genussmittel, Gewürze und Kochsalz [Alkaloid-containing Foods and Drinks, Spices and Cooking Salt], (Handbook of Food Chemistry 6), Berlin: Springer 1970; Solvay-Soda, Solvay salt, Solvay plastics (FS), Solingen: Solvay Germany; Ullmann 12: 662-681, E: 744-746; Winnacker-Küchler (3.) 1: 176-189.